

Notice of Allowability

Application No.

09/867,068

Examiner

Scott L. Jarrett

Applicant(s)

SCHEER, ROBERT H.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 8/9/2007.
2. ☒ The allowed claim(s) is/are 28-38.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.


Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☒ Interview Summary (PTO-413),
Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____


TAHIR D. HAFIZ
SUPERVISOR, PATENT EXAMINER
TECHNOLOGY CENTER 3600

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mr. Gary Jarosik (Reg. No. 35,906) on August 9, 2007.

Currently claims 1-27 are canceled and new claims 28-38 are added via examiner's amendment below, and are allowed.

Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in this application.

28. (New) A system for positioning items within a supply chain network having a plurality of geographic locations, comprising:

a customer maintenance system into which a work order is entered including information that identifies a piece of equipment to be repaired and at least one item expected to be used during a repair procedure;

a customer agent system in communication with the customer maintenance system which extracts from the work order entered into the customer maintenance system the information that identifies the at least one item expected to be used during the repair procedure and which uses the information extracted from the work order entered into the customer maintenance system to create an advance demand notice order for the at least one item; and

a distributor system in communication with the customer agent server which responds to a receipt of the advance demand notice order that was created using the information extracted from the work order to:

a) determine if the advance demand notice order includes a probability that the at least one item will need to be used during the repair procedure;

b) estimate, using at least forecast data associated with one or more of the piece of equipment and the at least one item which forecast data is extracted

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from a database of forecast data accessible to the distributor system, the probability that the at least one item will need to be used during the repair procedure when it is determined that the advance demand notice order fails to include the probability that the at least one item will need to be used during the repair procedure;

c) determine a cost associated with moving the at least one item within the supply chain;

d) determine, based upon the probability that the at least one item will need to be used during the repair procedure, a customer specified level of service associated with the advance demand notice, and the cost associated with moving the at least one item within the supply chain, a plurality of fulfillment plans for the at least one item each of which includes a specification of a one of the plurality of geographic locations within the supply chain from which the at least one item is to be sourced and a one of the plurality of geographic locations within the supply chain at which the at least one item is to be positioned prior to commencement of the repair procedure; and

e) select one of the plurality of fulfillments plans for implementation;

a supplier system that cooperates with the distributor system by initiating a replenishment of the at least one item at the one of the plurality of geographic locations within the supply chain from which the at least one item is to be sourced in accordance with the selected fulfillment plan; and

a transportation agent system in communication with the distributor system that coordinates with the distributor system to assist in moving the at least one item between the one of the plurality of geographic locations within the supply chain from which the at least one item is to be sourced and the one of the plurality of geographic locations within the supply chain at which the at least one item is to be positioned in accordance with the selected fulfillment plan.

29. (New) The system as recited in claim 23, wherein the forecast data comprises one or more of historical data indicative of prior consumption rates of the at least one item by a customer that is to repair the piece of equipment, deterministic demand data indicative of scheduled maintenance activity for the piece of equipment, and non-deterministic demand data indicative of scheduled maintenance activity for the piece of equipment compared to historical unscheduled maintenance activity for the piece of equipment.

30. (New) The system as recited in claim 23, wherein the customer specified level of service comprises a customer desired one of the geographic locations within the supply chain at which the at least one item is to be positioned in response to the advance demand notice.

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31. (New) The system as recited in claim 23, wherein the cost associated with moving the at least one item within the supply chain comprises one or more of an activity cost, a transportation cost, a holding cost, and an opportunity cost.

32. (New) The system as recited in claim 23, wherein the customer maintenance system comprises a computerized maintenance management system.

33. (New) The system as recited in claim 23, wherein the customer maintenance system comprises an enterprise asset management system.

34. (New) The system as recited in claim 23, wherein the customer agent server comprises an intelligent agent that extracts the information from the customer maintenance system in response to a user entering or modifying a work order.

35. (New) The system as recited in claim 23, wherein the distributor system comprises an intelligent agent in communication with the transportation agent system that monitors movement of the at least one item within the supply chain.

36. (New) The system as recited in claim 30, wherein the intelligent agent forms a corrective fulfillment plan if the intelligent agent determines that the at least one item is not being moved within the supply chain in accordance with the selected fulfillment plan.

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37. (New) The system as recited in claim 23, wherein the customer agent server extracts from the customer maintenance system forecast data for populating the database used in connection with estimating the probability that the at least one item will need to be used during the repair procedure.

38. (New) The system as recited in claim 23, wherein the distributor system further uses one or more of a calculated distributor margin associated with fulfilling the advance demand notice and a customer pricing tolerance associated with fulfilling the advance demand notice when determining a plurality of fulfillment plans for the at least one item.

ALLOWANCE

The following is an Allowance in response to the Request for Continued Examination submitted on July 26, 2007 and the Interview held with Mr. Jarosik on August 9, 2007. Currently claims 28-38 are allowed.

REASONS FOR ALLOWANCE

The following is an examiner's statement of reasons for allowance.

The present invention is directed to a system for positioning items within a supply chain network wherein the system selects and implements one of a plurality of fulfillment plans for replenishing and positioning at least one item expected to be used during a repair procedure at one of a plurality of geographic locations within the supply chain from which the at least one item is to be sourced in accordance with the selected fulfillment plan wherein the system positions, in accordance with a selected fulfillment plan, the at least one item between the one of the plurality of geographic locations within the supply chain from which the at least one item is to be sourced and further wherein the plurality of fulfillment plans are generated in response to an generated advance demand notice order for the at least one identified item expected to be used during a repair procedure based on information extracted from a work order entered into a customer maintenance system information such that the response

- a) determines if the advance demand notice order includes a probability that the at least one item will need to be used during the repair procedure;

b) estimates, using at least forecast data associated with one or more of the piece of equipment and the at least one item which forecast data is extracted from a database of forecast data accessible to the distributor system, the probability that the at least one item will need to be used during the repair procedure when it is determined that the advance demand notice order fails to include the probability that the at least one item will need to be used during the repair procedure;

c) determines a cost associated with moving the at least one item within the supply chain;

d) determines, based upon the probability that the at least one item will need to be used during the repair procedure, a customer specified level of service associated with the advance demand notice, and the cost associated with moving the at least one item within the supply chain, a plurality of fulfillment plans for the at least one item each of which includes a specification of a one of the plurality of geographic locations within the supply chain from which the at least one item is to be sourced and a one of the plurality of geographic locations within the supply chain at which the at least one item is to be positioned prior to commencement of the repair procedure.

The closest prior art Kirkevold et al., U.S. Patent No. 6,263,322, Huang, U.S. Patent No. 5,953,707, Graves, Stephen, A Multiple Item Inventory Model with a Job Completion Criterion (1982), Roddy et al., U.S. Patent Publication No. 2003/0055666

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and Yang et al., U.S. Patent Publication No. 2001/0034673 fail to teach or suggest either singularly or in combination a system for positioning items within a supply chain network comprising: extracting information that identifies at least one item expected to be used during the repair procedure from a work order entered into a customer maintenance system information; creating, via a customer agent system, an advance demand notice order for the at least one identified item expected to be used during a repair procedure based on the extracted information; responding to a receipt of the advance demand notice, via a distributor system, in order to:

- a) determine if the advance demand notice order includes a probability that the at least one item will need to be used during the repair procedure;

- b) estimate, using at least forecast data associated with one or more of the piece of equipment and the at least one item which forecast data is extracted from a database of forecast data accessible to the distributor system, the probability that the at least one item will need to be used during the repair procedure when it is determined that the advance demand notice order fails to include the probability that the at least one item will need to be used during the repair procedure;

- c) determine a cost associated with moving the at least one item within the supply chain;

- d) determine, based upon the probability that the at least one item will need to be used during the repair procedure, a customer specified level of service associated with the advance demand notice, and the cost associated with

moving the at least one item within the supply chain, a plurality of fulfillment plans for the at least one item each of which includes a specification of a one of the plurality of geographic locations within the supply chain from which the at least one item is to be sourced and a one of the plurality of geographic locations within the supply chain at which the at least one item is to be positioned prior to commencement of the repair procedure; and

e) select one of the plurality of fulfillments plans for implementation;

initiating a replenishment of the at least one item at the one of the plurality of geographic locations within the supply chain from which the at least one item is to be sourced in accordance with the selected fulfillment plan, via a supplier system; and

coordinating, via a transportation agent system, with the distributor system that with the distributor system to assist in moving the at least one item between the one of the plurality of geographic locations within the supply chain from which the at least one item is to be sourced and the one of the plurality of geographic locations within the supply chain at which the at least one item is to be positioned in accordance with the selected fulfillment plan as recited in independent Claim 28.

Roddy et al. teach an asset maintenance management method and system in a supply chain network comprising: a customer maintenance system into which information pertaining to a work order is entered including information that identifies the piece of equipment to be repaired and one or more items expected to be used during a repair procedure; a customer system in with the maintenance system which extracts

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from the maintenance system information that identifies what repairs/maintenance are to be performed wherein the maintenance specifies the parts, equipment, and other resources necessary to perform the maintenance activity information to create an advanced demand notice order that identifies the items; and a distributor system in communication with a plurality of systems that respond to the advanced demand notice order of items expected to be used as part of the repair procedure; and a supplier system that cooperates the distributor system.

Yang et al. teach a service parts inventory management and planning method and system comprising: a supply chain network including a plurality of collaborating planner systems; access by the plurality of planner systems to a plurality of service parts information including but not limited to demand forecasts wherein demand forecasts for "...service parts based on data concerning the lifespan of products and their constituent parts, failure rates of products and their constituent parts, and any other suitable information."; generating inventory, fulfillment and replenishment plans according to a plurality of information including but not limited to demand forecasts; staging parts in accordance with the fulfillment/inventory plan; a procurement, order management and planning subsystem enabling customers, suppliers and distributors to collaborate to obtain service parts/items; and a service scheduling subsystem which coordinates parts requirements with service requests based on available service parts and ensures that parts are available at the repair site on or before the schedule service date.

Kirkevold et al. teach a supply chain network comprising: entering work order information identifying a piece of equipment to be repaired and one or more items expected to be used during a repair procedure, via a subsystem; extracting from the entered work order information that identifies at least the items expected to be used during the repair procedure and creating a notice for the items, via a subsystem; and determining, scheduling and procuring the items extracted from the work order prior to the commencement of the repair procedure in response to the receipt of the notice.

Huang et al. teaches determining based on a plurality of demand information at which one of the geographic locations items need to be positioned in a supply chain network prior to the commencement of one or more repair procedures, via a Decision Support System; determining the repair time requirements based on item availability and the equipment failure (equipment, parts, locations, etc.; Column 16, Lines 4-16).

Graves, teaches a well-known method for calculating a probability that an item and/or set of items will need to be used during the repair procedure.

None of the prior art of record, taken individually or in any combination, teach, inter alia, a system for positioning items within a supply chain network comprising: extracting information that identifies at least one item expected to be used during the repair procedure from a work order entered into a customer maintenance system

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information; creating, via a customer agent system, an advance demand notice order for the at least one identified item expected to be used during a repair procedure based on the extracted information; responding to a receipt of the advance demand notice, via a distributor system, in order to:

a) determine if the advance demand notice order includes a probability that the at least one item will need to be used during the repair procedure;

b) estimate, using at least forecast data associated with one or more of the piece of equipment and the at least one item which forecast data is extracted from a database of forecast data accessible to the distributor system, the probability that the at least one item will need to be used during the repair procedure when it is determined that the advance demand notice order fails to include the probability that the at least one item will need to be used during the repair procedure;

c) determine a cost associated with moving the at least one item within the supply chain;

d) determine, based upon the probability that the at least one item will need to be used during the repair procedure, a customer specified level of service associated with the advance demand notice, and the cost associated with moving the at least one item within the supply chain, a plurality of fulfillment plans for the at least one item each of which includes a specification of a one of the plurality of geographic locations within the supply chain from which the at least one item is to be sourced and a one of the plurality of geographic locations within

the supply chain at which the at least one item is to be positioned prior to commencement of the repair procedure; and

e) select one of the plurality of fulfillment plans for implementation;

initiating a replenishment of the at least one item at the one of the plurality of geographic locations within the supply chain from which the at least one item is to be sourced in accordance with the selected fulfillment plan, via a supplier system; and

coordinating, via a transportation agent system, with the distributor system that with the distributor system to assist in moving the at least one item between the one of the plurality of geographic locations within the supply chain from which the at least one item is to be sourced and the one of the plurality of geographic locations within the supply chain at which the at least one item is to be positioned in accordance with the selected fulfillment plan as recited in independent Claim 28.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Luxhoj et al., Probabilistic Spares Provision for Repairable Population Models (1988), teaches a method for spares parts provision in a supply chain network based on the probability of needing the part for equipment repairs/maintenance.

- Cohen et al., Identifying Opportunities for Improving Teradyne's Service-Parts Logistics System (1999), teaches a system and method for positioning spare parts (parts expected to be used during a repair procedure) in a supply chain network having a plurality of geographic locations.

- Wang, Service Parts Logistics: Modeling, Analysis and Application (1998), teach a plurality of known service part logistics methods/systems for positioning items necessary for repair/maintenance procedures in a multi-level supply chain network.

- Patton et al., Service Parts Handbook (1997), teach a plurality of well known methods for positioning items expected to be used during repair/maintenance procedures in a multi-echelon supply chain network.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Scott L. Jarrett whose telephone number is (571) 272-7033. The examiner can normally be reached on Monday-Friday, 8:00AM - 5:00PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hafiz Tariq can be reached on (571) 272-6729. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Scott L. Jarrett
August 15, 2007